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1 Routine/Function Prologues

1.0.1 noah_singleout.F90 (Source File: noah_singleout.F90)

Write output file for a single noah variable

REVISION HISTORY:

14 Jun 2002 Sujay Kumar; Initial Specification

INTERFACE:

```
subroutine noah_singleout (ld,tile,var_array, index)
```

USES:

```
use lis_module      ! LDAS non-model-specific 1-D variables
use tile_module     ! LDAS non-model-specific tile variables
use time_manager, only : get_nstep
use noah_varder, only : noahdrv
use drv_output_mod, only : t2gr
```

```
implicit none
```

ARGUMENTS:

```
type (lisdec) :: ld      !data structure for lis domain specific variables
type (tileddec) :: tile(ld%d%glnch) !tile array for the modeled domain
real           :: var_array(ld%d%glnch) !array of variable that is being output
integer         :: index   !Index of the output variable in the ALMA list.
```

CONTENTS:

```
!-----
! Test to see if output writing interval has been reached
!-----
IF(MOD(LD%T%GMT, noahdrv%WRITEINTN).EQ.0)THEN
    noahdrv%NUMOUTNH=noahdrv%NUMOUTNH+1
!-----
! Generate directory structure and file names for NOAH output
!-----
length = len(trim(vname1(index)))
WRITE(UNIT=temp1, FMT='(A10)') VNAME1(index)
READ(UNIT=temp1,FMT='(10A1)') (FVARNAME(I), I=1,length)
WRITE(UNIT=temp1,FMT='(I4,I2,I2)')LD%T%YR,LD%T%MO,LD%T%DA
READ(UNIT=temp1,FMT='(8A1)') FTIME
DO I=1,8
    IF(FTIME(I).EQ.(' '))FTIME(I)='0'
ENDDO
WRITE(UNIT=temp1,FMT='(I4)')LD%T%YR
READ(UNIT=temp1,FMT='(8A1)')FTIMEC
DO I=1,4
```

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        IF(FTIMEC(I).EQ.( ' ))FTIMEC(I)='0'
ENDDO

#if 0
    WRITE(UNIT=temp1,FMT=(A7,I3,A1)) '/LDAS.E',LD%0%EXPCODE,'.'
    READ(UNIT=temp1,FMT=(80A1)) (FNAME(I),I=1,11)
    DO I=1,11
        IF(FNAME(I).EQ.( ' ))FNAME(I)='0'
    ENDDO
#endif
#endif

idisk = mod(index, 1d%o%odirn)
if ( idisk == 0 ) then
    idisk = 1d%o%odirn
endif
WRITE(UNIT=temp1,FMT=(A40)) LD%0%ODIR_ARRAY(idisk)
READ(UNIT=temp1,FMT=(40A1)) (FBASE(I),I=1,40)
C=0
DO I=1,40
    IF(FBASE(I).EQ.( ' ) .AND.C.EQ.0)C=I-1
ENDDO

WRITE(UNIT=temp1,FMT=(A4,I3,A6,I4,A1,I4,I2,I2)) '/EXP', &
    LD%0%EXPCODE,'/NOAH/', &
    LD%T%YR,'/ ',LD%T%YR,LD%T%MO,LD%T%DA
READ(UNIT=temp1,FMT=(80A1)) (FYRMODIR(I),I=1,26)
DO I=1,26
    IF(FYRMODIR(I).EQ.( ' ))FYRMODIR(I)='0'
ENDDO

WRITE(UNIT=temp1,FMT=(A9))'mkdir -p '
READ(UNIT=temp1,FMT=(80A1))(FMKDIR(I),I=1,9)

WRITE(UNIT=temp1,FMT=(80A1))(FMKDIR(I),I=1,9),(FBASE(I),I=1,C), &
    (FYRMODIR(I),I=1,26)
READ(UNIT=temp1,FMT=(A80))MKFYRMO
!-----
! Make the directories for the NOAH output data files
!-----
CALL SYSTEM(MKFYRMO)
!-----
! Generate file name for BINARY output
!-----
IF(LD%0%WOUT.EQ.1) THEN
    WRITE(UNIT=FBINNAME, FMT=(I4,I2,I2,I2)) LD%T%YR,LD%T%MO, &
        LD%T%DA,LD%T%HR
    READ(UNIT=FBINNAME,FMT=(10A1)) FTIMEB
    DO I=1,10

```

```

        IF(FTIMEB(I).EQ.(' '))FTIMEB(I)='0'
ENDDO
!
!      WRITE(UNIT=FBINNAME,FMT='(A9)') '.NOAHgbin'
!      READ(UNIT=FBINNAME,FMT='(80A1)') (FSUBGB(I),I=1,9)
if ( 1d%d%domain == 8 ) then
    write(unit=fbasename,fmt='(A5)') '.gd4r'
    read(unit=fbasename,fmt='(80A1)') (fsubgb(i),i=1,5)
else
    write(unit=fbasename,fmt='(A5)') '.ls4r'
    read(unit=fbasename,fmt='(80A1)') (fsubgb(i),i=1,5)
endif
#endif 0
      WRITE(UNIT=FBINNAME,FMT='(80A1)')(FBASE(I),I=1,C), &
          (FYRMODIR(I),I=1,26), &
          (FNAME(I),I=1,11),(FTIMEB(I),I=1,10), &
          (FVARNAME(I), I=1,length),(FSUBGB(I),I=1,9)
      READ(UNIT=FBINNAME,FMT='(A80)')FILENGB
#endif
      WRITE(UNIT=FBINNAME,FMT='(80A1)')(FBASE(I),I=1,C), &
          (FYRMODIR(I),I=1,26), '/,&
          (FTIMEB(I),I=1,10), &
          (FVARNAME(I), I=1,length),(FSUBGB(I),I=1,5)
      READ(UNIT=FBINNAME,FMT='(A80)')FILENGB
!---
!--- Open statistical output file
!---
IF(noahdrv%NOAHopen.EQ.0)THEN
    FILE='Noahstats.dat'
    CALL OPENFILE(NAME,LD%0%ODIR,LD%0%EXPCODE,FILE)
    IF(LD%0%STARTCODE.EQ.1)THEN
        OPEN(65,FILE=NAME,FORM='FORMATTED',STATUS='UNKNOWN', &
              POSITION='APPEND')
    ELSE
        OPEN(65,FILE=NAME,FORM='FORMATTED',STATUS='REPLACE')
    ENDIF
    noahdrv%NOAHopen=1
ENDIF

      WRITE(65,996)' Statistical Summary of NOAH Output for: ', &
          LD%T%MO,'/',LD%T%DA,'/',LD%T%YR,LD%T%HR,:',LD%T%MN,:',LD%T%SS
996      FORMAT(A47,I2,A1,I2,A1,I4,1X,I2,A1,I2,A1,I2)
      WRITE(65,*)
      WRITE(65,997)
997      FORMAT(T27,'Mean',T41,'StDev',T56,'Min',T70,'Max')
ENDIF
!---
! Write output in HDF and binary (if WBIN=1) format
!---

```

```

if ( ld%o%wout == 1 ) then
  if ( ld%d%domain == 8 ) then ! special 1km regional domain
    allocate(g2tmp(ld%d%lnc,ld%d%lnr))
    g2tmp = ld%d%UDEF
    do i = 1, ld%d%glbnch
      g2tmp(tile(i)%col, tile(i)%row) = var_array(i)
    enddo

    if ( ld%o%odirn == 1 ) then
      open(58,file=filengb,form='unformatted',access='direct', &
            recl=ld%d%lnc * ld%d%lnr * 4)
      write(58, rec=1) g2tmp
    else !*** multi disk output
      open(58,file=filengb,form='unformatted',access='direct', &
            recl=ld%d%lnc*4)
      do i = 1, ld%d%lnr
        nrec = (ld%d%ir-1) * ld%d%lnr * 50 + ( i - 1 ) * 50 + ld%d%ic
        write(58,rec=nrec) g2tmp(:,i)
      enddo
    endif
    deallocate(g2tmp)
  else
    ! all other domains
    open(58,file=filengb,form='unformatted')
    allocate(gttmp(ld%d%glbngrid))
    call t2gr(var_array,gttmp,ld%d%glbngrid,ld%d%glbnch,tile)
    write(58) gttmp
    deallocate(gttmp)
  endif
  call stats(var_array,ld%d%udef,ld%d%glbnch, vmean, &
             vstdev, vmin, vmax);
  write(65,999) vname(index),vmean, vstdev, vmin, vmax
  close(58)
endif

998 FORMAT(1X,A18,4E14.3)
999 FORMAT(1X,A18,4F14.3)
endif

```